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ABSTRACT

The Early Childhood Language Centered Intervention Program of the New York City Public Schools was designed to provide classroom instruction and transportation for preschool children with primary and secondary speech/language handicaps, and to train parents to participate in the education of these children. Using individual education plans (IEPs), the program focuses on language development, and attempts to enhance cognitive, perceptual-motor, and social-emotional skills. In 1981-82, the program served 97 children in four sites. Visits were made to the sites to evaluate program facilities, staffing, instruction, parent involvement activities, and staff inservice training, while the number of IEP objectives mastered by each pupil were tallied to determine pupil achievement. Results indicated that 90 percent of the pupils attained the criterion objective of at least one IEP objective mastered in each of the areas of language communication, cognition, early living activities, and social behavioral skills. In addition, pretest and posttest comparisons of scores on teacher administered Learning Accomplishment Profiles showed significant growth in fine motor skills, cognition, language, and gross motor ability. (MJL)

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O.E.E. EVALUATION REPORT

February, 1983

E.H.A., Part B
SUPPLEMENTARY SERVICES
FOR HANDICAPPED STUDENTS
EARLY CHILDHOOD
LANGUAGE-CENTERED
INTERVENTION PROGRAM

1981-82

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UD 022 878

SUMMARY OF THE EVALUATION
FOR THE E.H.A., PART B 1981-82
EARLY CHILDHOOD LANGUAGE-CENTERED INTERVENTION PROGRAM

For two years the Early Childhood Language-Centered Intervention Program of the Division of Special Education (D.S.E.) of the New York City Public Schools has provided classroom instruction and bus transportation for language-impaired preschool children and training and support for their parents. Family Court funds provided bus transportation throughout the program's operation and supported the entire program from February to June, 1982.

Results of the evaluation indicated that the program was highly effective both years in meeting its objectives. Participating students showed significant gains in all areas including language, cognitive, motor, and socio-emotional skills. The most substantial gains occurred in language ability, the focus of the program. Weekly home visits and parent workshops fostered the coordination of at-home experiences with classroom instruction. Enrollment was 61 in 1980-81 and 97 in 1981-82; 21 children continued for the second year.

TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
II.	EVALUATION OF PROGRAM IMPLEMENTATION	3
III.	EVALUATION OF PUPIL ACHIEVEMENT OBJECTIVE	6
IV.	CONCLUSIONS	12

LIST OF TABLES

		Page
Table 1:	Number of Students Mastering I.E.P. Objectives in Four Major Skill Areas	7
Table 2:	Summary of Comparisons between Mean Pre- and Post-test scores for Four Scales of the Learning Accomplishment Profile	9

I. INTRODUCTION

This report documents the implementation and accomplishments of the second year of the Early Childhood Language-Centered Intervention Program (hereafter referred to as E.C.L.I.) which was funded under the flow-through entitlement of the Education for all Handicapped Children Act, Part B from September, 1981 through January, 1982 and by Family Court rembursement from February through June, 1982. Bus transportation was provided by Family Court throughout the program's operation. In 1980 the Division of SpecialEducation (D.S.E.) of the New York City Public Schools established E.C.L.C. to provide preschool classroom instruction and bus transportation for handicapped children, ages three-to-five, and training and support for their parents. Research has indicated the importance of early intervention for the development of handicapped children. In particular, children with delayed language or speech development who receive appropriate preschool instruction have been shown to do better academically and to be better able to adjust to or overcome their handicaps.

Results of the evaluation of the first cycle, 1980-81, indicated that the program was effective in meeting its objectives. The 61 students who participated showed significant improvement in language, cognitive, motor, and social-emotional skills and 40 percent of the children who completed the program went on to attend regular-education kindergarten classes. The major recommendation of the 1980-81 evaluation was for increased individualized instruction.

During the second year, 1981-82, 97 students enrolled in one of 12 half-day sessions held at four sites, one each in Queens and the Bronx and two in Brooklyn. Eligibility for the program was based on referral by a health facility and either a Committee on the Handicapped or a school-based support

team. Program staff included the coordinator, six special education teachers, five educational paraprofessionals, six family workers, and one speech teacher; one paraprofessional and one itinerant speech teacher position remained vacant because of funding uncertainty past January, 1982.

Data for the evaluation of E.C.L.I. were collected by the Office of Educational Evaluation (O.E.E.) and included assessment of pupil progress, classroom observations, and staff interviews.

II. EVALUATION OF PROGRAM IMPLEMENTATION

PROGRAM DESCRIPTION

E.C.L.C. was designed to provide appropriate classroom instruction, parent training, and transportation for 97 preschool children with primary or secondary speech or language handicaps. Each child's needs were addressed through the individual educational plan (I.E.P.). The major program focus was language development but cognitive, perceptual-motor, and social-emotional skills were fostered as well. The program promoted parent involvement through a series of workshops and weekly home visits by family workers.

FINDINGS

Facilities, Staffing, and Instructional Activities

O.E.E. visits to six classes at the four sites indicated that classrooms were appropriately designed and furnished and were well-stocked with materials and equipment. Classroom instruction was largely individualized, reflecting the program's use of I.E.P.s, though in three classes, where many of the students were mildly handicapped, small-group instruction was also observed. In most classes the handicapping conditions of the students ranged from primary speech or language problems to autistic-like behavior.

The specific speech and language component of the program varied among sites both because of staffing limitations and the backgrounds of existing staff. At two sites the itinerant speech teacher met with children individually and in small groups for speech therapy, conducted language-experience activities for the whole class, and provided classroom teachers

with auxiliary materials to reinforce the speech lessons. Another site offered a highly enriched language environment for the children because the special education classroom teacher, who had a degree in speech and language, was able to structure an innovative, language-oriented classroom program which was supplemented by individual sessions with the itinerant speech teacher. Instruction ranged from language improvement to reading-readiness training through auditory and visual skills development. The speech teacher prepared daily records of student progress to inform the classroom teacher.

At one site which was not served by an itinerant speech teacher, a teacher with a special background in speech worked with the children in addition to the special education classroom teacher. Thus while there was no formal speech component at this site, all children received a measure of speech and language preparation from a trained professional. The last site had only a limited speech component because no outside expertise was available.

In addition to the classroom instruction and speech therapy the program included trips, athletic events, and participation in dramatic and dance performances.

Parent Involvement

At three of the sites, the family workers conducted weekly home visits to develop communication between family and program, worked with parents at home to provide continuity of services across environments, and, as directed by the teacher, helped parents carry out lessons and learning activities based on the children's I.E.P.s. The family workers also assisted parents in their relationships with the health facilities that

referred children to the program and occasionally with other service agencies. At one site where there was no family worker, the special education teacher spoke on the telephone with parents approximately once a week. Although parents of children at this site did not receive home visits or materials, they were kept informed of their children's progress and had an opportunity for dialogue.

The staff also designed workshops for parents to share experiences and learn about available services. Workshop topics were scheduled as follows: October, parents right and I.E.P.s; November, individual parent consultations with teachers; December, visits to Special Education Training and Resource (S.E.T.R.C.) Centers; February and March, variable by school; May, summer programs. Attendance records showed that 34 parents attended one or more workshops.

Inservice Training

The program coordinator conducted monthly staff workshops covering the following topics: language development; the relationship between language and learning disabilities; development of readiness skills; teacher-made materials; improving children's at-home behavior; and encouraging parent involvement. In addition, the coordinator held monthly workshops specifically for family workers.

III. EVALUATION OF PUPIL ACHIEVEMENT OBJECTIVE

MASTERY OF I.E.P. OBJECTIVES

The pupil achievement objective of the program was for 80 percent of participating students to master at least three objectives from their I.E.P.s. Program staff developed an I.E.P. for each child based on results of the teacher-administered Learning Accomplishment Profile (L.A.P.),* teacher observation and informal testing, parent interviews, referral information, and speech-teacher evaluation. I.E.P.s focussed on four major areas: language and communication; cognition; social and behavioral skills; and activities of daily living.

Of the 97 students that the program served, the teachers submitted I.E.P. data for 95 and complete data, including pre- and post-test L.A.P. scores, for 84. Of these 84, 63 entered the program during the 1981-82 cycle and 21 continued from the previous year. Students ranged in age from three to five years; average age was 50 months.

To determine whether the pupil achievement objective was attained, O.E.E. reviewed pupil records and tallied the number of I.E.P. objectives mastered by each child; records were reviewed at midyear and in June. Results for the full year, which are presented in Table 1, indicated that 90 percent of the students mastered at least four I.E.P. objectives; i.e., one or more each in language communication, cognition, activities of daily living, and social-behavioral skills. Accordingly, the objective was at-

*Le May, D.W. et al. Learning Accomplihment Profile, Diagnostic Edition (Revised). Chapel Hill, North Carolina: Chapel Hill Training-Outreach Project.

TABLE 1

Number of Students Mastering I.E.P. Objectives in
Four Major Skill Areas
(N = 95)

Skill Area	Number of Students	Percent of Population
Language Communication	90	95
Cognitive Skills	86	91
Activities of Daily Living	87	92
Social/Behavior	85	90

For the four major skill areas reported on student I.E.P.s, 90 percent of the participating students mastered one or more I.E.P. objectives in each.

tained. Furthermore, analysis of the mid-year data showed that by February 69 percent of the students had already met the criterion of three or more new skills.

Of all I.E.P. objectives mastered, the largest number were oral-language skills (26 percent), followed by visual-motor skills (22 percent), self-help skills (11 percent), and listening skills (11 percent). Visual perception, auditory attention, interpersonal skills, motor ability, and readiness skills accounted for less than 10 percent each.

L.A.P. FINDINGS

In addition to the review and analysis of the I.E.P. data, the L.A.P. pre- and post-test scores were compared. The L.A.P. consists of 323 items covering development of fine-motor skills, cognition, language, gross-motor ability, and self-help skills. Pre- and post-test scores on most of the L.A.P. subscales were available for 78 students. For about half the students post-testing took place seven months after pre-testing and for about one-fifth each post-testing occurred four months or nine months later.

Results of t tests for correlated means, which are presented in Table 2, showed significant growth in all areas. The average score in language skills, which included naming and comprehension, increased from 17.1 to 29.7 points out of a possible total score of 56 ($df = 77$; $t = 13.1$; $p < .001$); the average fine-motor manipulation and writing ability score increased from 37.3 to 54.8 points out of a possible score of 80 ($df = 77$; $t = 12.7$; $p < .001$); the average cognition score, which included matching and counting items, increased from 13.2 to 25.4 points out of a possible total of 55 ($df = 77$; $t = 12.6$;

TABLE 2

Summary of Comparisons between Mean Pre- and Post-test Scores for Four Scales of the Learning Accomplishment Profile.

Scale	Test	Total Possible	Mean	Standard Deviation	Mean Gain	N	t
Language	Pre	56	17.1	11.6	12.4	78	13.1*
	Post		29.7	12.9			
Fine Motor	Pre	80	37.3	16.5	17.5	78	12.7*
	Post		54.8	15.4			
Cognition	Pre	55	13.2	10.3	12.2	78	12.6*
	Post		25.4	12.0			
Gross Motor	Pre	79	45.0	16.8	12.1	51	10.4*
	Post		57.1	13.0			

*$p < .001$

Participating students showed significant gains on all subscales of the Learning Accomplishment Profile which were administered.

$p < .0001$); and the average score for the 51 students who were pre- and post-tested on groos-motor skills increased from 45.0 to 57.1 out of a possible 79 points ($df = 50$; $t = 10.4$; $p < .0001$). (See Technical Notes for a discussion of these statistics.)

While significant increases were evident on all subtests, the most dramatic growth occurred in those areas which were the specific focus of the program. To illustrate, the average pre-score on the naming section of the language subscale was about six points and the average post-test score was about 12 points out of a possible 29. Behaviorally, these scores corresponded to advancing from being able to name a few actions, objects, and their uses to being able to name the missing parts of a picture, many objects and actions, and recently performed activities. In terms of developmental levels the average pre-score corresponded to abilities in the 33-to-36-month range and the average post-score to abilities in the 48-to-54-month range.

Language comprehension scores also increased substantially. The average pre-score was about 11 points, corresponding to abilities at the 30-to-33-month level. Such items included responding to two prepositions, following a two-step command, and pointing to an object according to its use. The average post-score was about 17 points out of a possible 27, corresponding to abilities in the 42-to-48-month range. These included relating pictures to a story, responding to four prepositions, and pointing to numerals from one to ten.

A third area in which substantial gains were shown was on the writing section of the fine-motor subtest. Here the average score increased from 12 to about 21 points out of a possible 37. Specific behaviors at pretest included being able to imitate a V and a cross and copy a circle, abilities which are considered to be in the 30-to-36-month age range developmentally. Behaviors

corresponding to the average post-test score were at the 54 month level and included copying the letters V and H, the word "cat", and a square.

Scores on other subtests of the L.A.P. increased significantly and generally corresponded to growth of six months to one year in terms of developmental levels.

FINDINGS FROM PREVIOUS CYCLE

Data from the previous cycle, 1980-81, indicated comparable student gains on the L.A.P.: overall language scores increased from a mean of 15.9 to 26.8 (df = 53; t = 6.46; $p < .01$); mean fine-motor scores increased from 37.5 to 52.8 (df = 53; t = 6.61; $p < .01$); mean cognition scores increased from 12.8 to 23.0 (df = 53; t = 5.99; $p < .01$); and average gross-motor scores increased from 37.1 to 46.8 (df = 31; t = 3.07; $p < .01$). In addition, scores on the Levenstein Child Behavior Traits Rating Scale, a measure of social and emotional development, increased significantly (mean pre-score = 54.5; mean post-score = 62.5; df = 61; t = 3.53; $p < .01$).

*Levenstein, P. et al. Description of Child's Behavior Traits. In Johnson, Orval (Ed.) Tests and Measurements in Child Development, Handbook II. San Francisco: Jossey-Bass, 1976, 415-416.

IV. CONCLUSIONS

As in the previous cycle the E.C.L.I. program in 1981-82 was highly effective in meeting its proposed goals of providing a language-based preschool program for young children with speech or language handicaps. In most sites the implementation of the program was exemplary; staff were enthusiastic and well-trained, parents were actively involved, and student growth was substantial in all areas, particularly in language development, the program focus. The only major problem was the uncertainty regarding funding beyond the mid-year which interfered with filling some staff positions; where this occurred, however, existing staff were apparently able to provide adequate service. Funding permitting, this much-needed and effective program model should be replicated.

TECHNICAL NOTES

1. The *t* test for correlated samples is a method for comparing the means of two paired groups of data, in this case the pre- and post-test scores on the Learning Accomplishment Profile. The *t* tests asks whether or not the means of the two samples are enough different to conclude, with a high degree of confidence, that the samples are drawn from distinct populations.

2. *df* or degrees of freedom for correlated samples is equal to the number of pairs of scores less one.

3. $p<.001$. The *p* value represents the probability that the values observed have occurred by chance. Conversely, 1-p represents the degree of confidence with which one may conclude that, in this example, the means of the pre-test and post-test samples are enough different to indicate that the mean of the population of all participant pre-test scores is not equal to the mean of the population of all participant post-test scores.